CLAIMS:

1. A method of comparing a captured image to stored images to find a match, comprising:

5   retrieving a captured image;

setting default similarity index;

for I=1 to X,

take a random sample of pixels of the captured image;

perform face recognition between the random sample of the pixels

10   of the captured image to corresponding random samples of pixels of the stored

images;

calculate a new similarity index for the random sample of the

captured image and replace the similarity index if new similarity index is higher;

increment I; and

15   determine if the similarity index is above a predetermined threshold

for a match.

2. The method as claimed in claim 1, wherein a robust algorithm is used which samples the image and performs face recognition by substantially removing outliers

20   from having an impact on the comparison results.

3. The method as claimed in claim 2, wherein the algorithm is the RANSAC algorithm.

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4. The method as claimed in claim 2, wherein the algorithm is the least medium of squares algorithm.

5 5. The method is accordance with claim 1, wherein a weighted sample is used which is weighted with pixels which have a low likelihood of being affected by light.

6. The method in accordance with claim 1, wherein the step of determining occurs before the step of incrementing I, and if there is a match then additional random 10 samples do not need to be taken and compared.

7. The method in accordance with claim 1, wherein the value of X is based on desired accuracy.

15 8. The method in accordance with claim 1, wherein the value of X is based on computing requirements.

9. A device for comparing a captured image to stored images to find a match, comprising:

20 a device which receives a captured image;

a processor which performs the following function:

create default similarity index;

For I=1 to X,

random sample the pixels of the captured image;

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perform face recognition between the random sample of pixels of the captured image and the corresponding random sample of pixels of the stored images;

calculate a new similarity index and replace similarity index with new similarity index if it is higher; and

increment I;

determine if the similarity index is above a threshold for a match.

10. The device as claimed in claim 9, wherein the processor performs image comparison using an algorithm that substantially lessens the possibility that outliers will cause inaccurate results.

11. The device as claimed in claim 10, wherein the algorithm is the RANSAC algorithm.

12. The device as claimed in claim 10, wherein the algorithm is the least medium of squares algorithm.

13. The device as claimed in claim 9, wherein a weighted random sample is used which is weighted with pixels which have a low likelihood of being affected by light.

14. The device as claimed in claim 9, wherein the determining occurs before the step of incrementing I, and if there is a match then additional random samples do not need to be taken.

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15. The device as claimed in claim 9, where the value of X is based on computing power.

16. The device as claimed in claim 9, where the value of X is based on desired accuracy.

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17. A device for comparing images, comprising

    a random sampler for selecting a plurality of random samples of pixels from a captured image;

    a comparator that performs face recognition on the random sample and on a

15   corresponding random sample in a stored image such that shadow regions of the random samples are treated as outliers and do not substantially affect the outcome of the face recognition;

    a processor that computes a similarity index and determines if there is a match between the captured image and the stored image.

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18. The device as claimed in claim 17, wherein a plurality of random samples are chosen and compared and the random sample with the highest similarity index is used to determine if there is a match between the captured image and the stored image.

19. A method of comparing images, comprising:

selecting a random sample of pixels from a captured image using a robust sampling algorithm;

5 performing face recognition, using this algorithm which substantially ignores shadowed regions of the image, on the random sample and the same random sample in a stored image;

computing a similarity index using this algorithm and determining if there is a match between the captured image and the stored image.

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20. The method as claimed in claim 19 wherein the step of selecting selects a plurality of random samples and the step of performing face recognition compares the plurality of random samples with the same random samples in the stored images and computes similarity indexes and the highest similarity index is

15 used to determine if there is a match between the captured image and the stored image.